

## **REMARKS**

Claims 1-29 remain in the present application, with new claims 30-36 being added by way of the present amendment. Further, claim 5 has been amended so as to correct a minor typographical error. Applicants assert that no new matter has been added as a result of the amendment to claim 5 and therefore has not changed the scope of claim 5. Claims 1, 13, 30 and 34 are the sole independent claims in connection with the present application

### **35 U.S.C. §112 REJECTIONS**

The Examiner has rejected claims 1 and 13 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. This rejection is respectfully traversed.

Regarding claim 1, the Examiner alleges that it is unclear as to what is meant by a pulse frequency of  $\geq 20$ , as no dimension corresponding to the value is provided.

Applicants noticed that the frequency designation had been inadvertently omitted thus have amended claim 1 to include "kHz" dimension corresponding to the value 20. The amendment is supported by at least paragraph [0011] of the specification and is a clarifying, and thus non-narrowing, amendment. Thus, withdrawal of the rejection is respectfully requested.

Regarding claim 13, the Examiner alleges that it is unclear what is meant by a pulse frequency of  $\geq 20$ , as no dimension is provided.

Applicants respectfully challenge this rejection, and asserts that claim 13 does indeed provide a dimension of "kHz" for the value of 20 recited in pending claim 13. Thus, withdrawal of this rejection is respectfully requested.

**PREFERRED EMBODIMENT OF THE PRESENT APPLICATION**

The present application, in a preferred embodiment, includes a method for laser drilling which may permit, for example, rapid production of blind holes or through-holes without incurring thermal damages to the incident material. This preferred embodiment of the present application, uses a frequency doubled Nd-vanadate laser for the laser drilling, such that the material can be machined without the possibility of thermal damage. One preferred embodiment of the present application permits such drilling by using a laser of a frequency of  $\geq 20$  kHz for laser drilling of organic material; and another preferred embodiment discloses the use of a frequency of  $\geq 30$  kHz for laser drilling of metallic material.

**PRIOR ART REJECTION**

The Examiner has rejected claims 1, 2 and 13 under 35 U.S.C. §102(b) as being anticipated by O'Brien. This rejection is respectfully traversed and is

further inapplicable to new claims 30-36.

O'Brien is directed towards the formation of an image or pattern in an article such as a metal coated substrate. As indicated by the Examiner, O'Brien discloses a forming of such pattern using a laser with a frequency of 75 Hz (col. 9, lines 35-37). Thus, there is no indication in O'Brien of using a frequency of  $\geq 20$  kHz as now claimed in independent claim 1, and as was previously claimed in claim 13. Accordingly, withdrawal of the above rejection is respectfully requested.

Further, regarding new claims 30 and 36, and all claims dependent therefrom, these claims include a method of using a laser of  $\geq 30$  kHz, which is again well beyond the 75 Hz disclosed in O'Brien. Thus, these claims are also allowable over O'Brien.

The Examiner has rejected claims 3-12, and 14-29 under 35 U.S.C. §103(a). More specifically, the Examiner has rejected claims 3, 4, 14 and 15 as being anticipated by O'Brien in view of Reedy; claims 5-9, 16, and 17 as being anticipated by O'Brien in view of Mercx (U.S. Patent No. 5,866,644) and claims 10-12 and 18-29 as being anticipated by O'Brien in view of Mercx (U.S. Patent No. 5,866,644) and Mercx (U.S. Patent No. 6,214,916).

Applicants submit that even assuming *arguendo* that O'Brien could be combined with any one or all of Reedy, Mercx (5,866,644) and Mercx (6,214,916) in the manner set forth immediately above (which Applicants do

not admit), each of Reedy, Mercx (5,866,644) and Mercx (6,214,916) would still all fail to make up for at least the aforementioned deficiency of O'Brien.

Reedy has merely been relied upon by the Examiner to show a method in which a laser makes use of a variable beam spot size of approximately 60 microns; Mercx (5,866,644) has merely been relied upon by the Examiner to show a composition for laser marking including 0.01 to 4% by weight of organic red pigment; and Mercx (6,214,916) has merely been relied upon by the Examiner to show the mechanism within a composition for laser marking being a combination of increased absorption of laser light.

Consequently, Reedy, Mercx (5,866,644) and Mercx (6,214,916) all fail to teach or suggest at least a pulse frequency of  $\geq 20$  kHz, as recited in claims 1 and 13, and a pulse frequency of  $\geq 30$  kHz, as recited in claims 30 and 34, and thus, even assuming *arguendo* that Reedy, Mercx (5,866,644) and Mercx (6,214,916) could be combined with O'Brien for at least the reasons set forth above, neither Reedy, Mercx (5,866,644) or Mercx (6,214,916) would make up for the deficiencies of O'Brien. Thus, for at least the reasons set forth above withdrawal of this rejection is respectfully requested.

### **CONCLUSION**

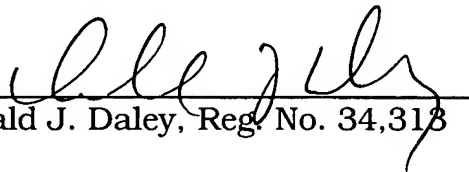
In view of above remarks, reconsideration of the outstanding rejection and allowance of all pending claims is respectfully requested.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Andrew M. Waxman, Reg. No. 56,007, at the telephone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKY & PIERCE, P.L.C

By:   
Donald J. Daley, Reg. No. 34,313

DJD/AMW:jcp

P.O. Box 8910  
Reston, Virginia 20195  
(703) 390-3030